CLAIMS

1. A quantitative measurement method which uses a structure formed with a material having a three dimensional mesh structure, and which contains a reagent which reacts with a target substance in the mesh, to perform quantitative measurements of the target substance, comprising:

a contacting step in which a test specimen containing the target substance is brought into contact with the structure;

a detecting step which detects, at a contact interface between the test specimen and the reagent, a substance whose quantity increases or decreases within the structure by means of the reaction between the target substance and the reagent; and

a quantitative measurement step which performs quantitative measurement of the target substance in response to the results of the detecting step;

wherein the mesh structure allows at least the target substance to pass therethrough.

2. The quantitative measurement method according to claim 1, wherein the mesh structure has a size which prevents a specimen which is larger than the target substance from passing therethrough.

3. The quantitative measurement method according to claim 1, wherein the test specimen is whole blood, and the target substance is the blood plasma component thereof.

4. The quantitative measurement method according to claim 1, wherein in the detection step, the concentration of the quantitatively increasing or decreasing substance is measured at a predetermined distance from the contact interface between the test specimen and the structure, after a predetermined period of time has elapsed from the time at which the test specimen came into contact with the structure in the contacting step.

5. The quantitative measurement method according to claim 1, wherein in the detection step, the time until a predetermined concentration of the quantitatively

increasing or decreasing substance is detected at a predetermined distance from the contact interface between the test specimen and the structure will be measured based upon the time at which the test specimen first came into contact with the structure in the contacting step.

6. The quantitative measurement method according to claim 1, wherein in the detection step, the distance from the contact interface between the test specimen and the structure to the position where the quantitatively increasing or decreasing substance is detected will be measured, after a predetermined period of time has elapsed from the time at which the test specimen first came into contact with the structure in the contacting step.

7. The quantitative measurement method according to claim 1, wherein in the detection step, the concentration distribution of the quantitatively increasing or decreasing substance is detected at a distance from the contact interface between the structure and the test specimen by scanning the structure after the contacting step.

8. The quantitative measurement method according to claim 1, wherein in the detection step, the quantitatively increasing or decreasing substance is detected by measuring the light absorbency of the quantitatively increasing or decreasing substance.

9. The quantitative measurement method according to claim 1, further comprising a diffusion promoting step which promotes the diffusion of the target substance into the structure by applying a voltage to the target substance having an electrical charge.

10. A quantitative measurement chip comprising:

a reaction cell having a structure which is formed with a three dimensional mesh structure material, the structure containing a reagent that reacts with a target substance in the mesh;

a photoemitter and a photoreceptor for measuring, at a contact interface between the test specimen and the reagent, the light absorbance of a substance whose quantity increases or decreases within the reaction cell by means of the reaction between the target substance and the reagent; and

an injection tube for injecting the test specimen containing the target substance into the reaction cell;

wherein the mesh structure allows at least the target substance to pass therethrough.

11. The quantitative measurement chip according to claim 10, wherein the mesh structure has a size which prevents a test specimen that is larger than the target substance from passing therethrough.

12. The quantitative measurement chip according to claim 10, wherein the planar direction of the photoemission surface of the photoemitter and the planar direction of the photoreception surface of the photoreceptor intersect with the planar direction of the contact interface.

13. The quantitative measurement chip according to claim 10, wherein the photoemitter and the photoreceptor are respectively formed from a photoemission hole for irradiating light into the structure and a photoreception hole which receives light from the structure.